

**Important topics for VLSI-ECE 7th Sem**  
**By the TIE review team, ECE**

**Module-1**

1. MOS Transistors
2. CMOS Transistors and transmission gates, tristate MUX
3. Non-Ideal I-V effects
4. DC Transfer characteristics

**Module-2**

1. CMOS technologies
2. Fabrication processes
3. Stick Diagram
4. Design Layout rules
5. MOSFET capacitance

**Module-3**

1. RC Delay Model
2. Linear delay model
3. Circuit families (Inverter, NAND, Low-skew, Hi-skew, Unskewed)
4. Pass transistors circuit

**Module-4**

1. Conventional CMOS latches and Flipflops
2. Examples
3. Principles of pass transistor circuits

**Module-5**

1. Classification of semiconductor memory
2. SRAM (Read, write, operation)
3. DRAM
4. 1-transistors, 3-transistors
5. testing and verification
6. Design for testability, test principles

**Note: Problems are very important for this subject, please practice them problems in abundance.**